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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,379	01/15/2004	Christian D. Kasper	98-C-172 (52038-CON)	5440

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EXAMINER

SORRELL, ERON J

ART UNIT	PAPER NUMBER
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2182

DATE MAILED: 12/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/758,379

Applicant(s)

KASPER, CHRISTIAN D.

Examiner

Eron J Sorrell

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-47 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 18-47 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>1/15/04</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Specification

1. An application in which the benefits of an earlier application are desired must contain a specific reference to the prior application(s) in the first sentence of the specification or in an application data sheet (37 CFR 1.78(a)(2) and (a)(5)). The specific reference to any prior nonprovisional application must include the relationship (i.e., continuation, divisional, or continuation-in-part) between the applications except when the reference is to a prior application of a CPA assigned the same application number. Please amend the specification accordingly.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

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Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claim(s) 1-9,11-14,and 16-20 of Patent No. 6,691,178 contain(s) every element of claim(s) 18,22-28,32-35,39-42,46, and 47 of the instant application and as such anticipate(s) claim(s) 18,22-28,32-35,39-42,46, and 47 of the instant application.

"A later patent claim is not patentably distinct from an earlier patent claim if the later claim is obvious over, or anticipated by, the earlier claim. In re Longi, 759 F.2d at 896, 225 USPQ at 651 (affirming a holding of obviousness-type double patenting because the claims at issue were obvious over claims in four prior art patents); In re Berg, 140 F.3d at 1437, 46 USPQ2d at 1233 (Fed. Cir. 1998) (affirming a holding of obviousness-type double patenting where a patent application claim to a genus is anticipated by a patent claim to a species within that genus). " ELI LILLY AND COMPANY v BARR LABORATORIES, INC., United States Court of Appeals for the Federal Circuit, ON PETITION FOR REHEARING EN BANC (DECIDED: May 30, 2001).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the

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invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 18 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Williams (U.S. Patent No. 6,182,164).

6. Referring to claim 18, Williams teaches a method for reducing transfer latencies in a fencepost buffering comprising the steps of:

providing a cache between a network controller and a host entity with shared memory (see figure 3 and lines 44-55 of column 1);

fetching a first and second descriptor address location from shared memory wherein the first descriptor address location is a location of an active descriptor and the second descriptor address location is a location of a reserved descriptor (see figure 5 and lines 14-24 of column 2);

copying the active descriptor to the cache (see lines 45-53 of column 7); and

issuing a command to DMA for the transfer of the active descriptor back to the shared memory (see lines 44-55 of column 1).

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7. Referring to claim 19, Williams teaches holding the active descriptor as a current descriptor within a top cache (see lines 45-53 of column 7).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 20-23 rejected under 35 U.S.C. 103(a) as being unpatentable over Williams in view of Lai et al. (U.S. Patent No. 6,145,016 hereinafter "Lai").

10. Referring to claims 20-23 Williams teaches the cache comprising the top cache and bottom cache and teaches the processing of descriptors (see Williams, figure 3 and lines 44-55 of column 1 and lines 45-53 of column 7), however, Williams fails to teach the steps of: copying a reserve descriptor from a

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bottom cache into the top cache when the current descriptor in the top cache is consumed and the step of fetching the next descriptor in an external ring of descriptors when the reserve descriptor is copied into the top cache; copying the second descriptor address location into the first descriptor address location after the active descriptor is copied to the top cache and fetching a next descriptor address location from the shared memory; and placing the next descriptor address location in the second descriptor address location.

Lai teaches a system and method wherein a chained list of descriptors (external ring) is processed. Lai teaches that each descriptor in the list (ring) is retrieved, copied, processed, and then released (see Lai, lines 62-67 of column 7 and lines 1-18 of column 8).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the system and method of Williams with the above teachings of Lai such that the method includes the steps of: copying a reserve descriptor from a bottom cache into the top cache when the current descriptor in the top cache is consumed and the step of fetching the next descriptor in an external ring of descriptors when the reserve descriptor is copied into the top cache; copying the second descriptor address location into the first

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descriptor address location after the active descriptor is copied to the top cache fetching a next descriptor address location from the shared memory; and placing the next descriptor address location in the second descriptor address location. One of ordinary skill in the art would have been motivated to make such modification in order to allow for reuse of descriptors after they have been processed as suggested by Lai (see paragraph bridging columns 8 and 9).

11. Claims 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (U.S. Patent No. 6,182,164) in view of Oskouy (U.S. Patent No. 5,745,790).

12. Referring to claim 24-26, Williams fails to teach means for updating the ownership of terminal descriptors by writing an End of Frame (EOF) descriptor to shared memory before writing a Start of Package (SOP) descriptor to shared memory and setting an ownership bit in the EOF descriptor when the EOF descriptor is the active descriptor.

Oskouy discloses means for updating the ownership of terminal descriptors by writing an End of Frame (EOF) descriptor to shared memory before writing a Start of Package (SOP)

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descriptor to shared memory and setting an ownership bit in the EOF descriptor when the EOF descriptor is the active descriptor (see lines 15-35 of column 1).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the system and method of Williams with the above teachings from Oskouy. One of ordinary skill in the art would have been motivated to make such modification in order to determine the status of a data transfer operation by referring to the OWN bit of a terminal descriptor as suggested by Oskouy (see lines 15-35 of column 1).

13. Referring to claim method claim 28, and system claims 35 and 42, Williams teaches a method and system for reducing transfer latencies in fencepost buffering having chained descriptors comprising:

- a network controller (see item labeled 102 in figure 1 and lines 44-55 of column 1);

- a host entity with shared memory (see item labeled 110 in figure 1 and lines 44-55 of column 1);

- a cache between the network controller and the host entity with shared memory wherein the cache has a top and bottom cache (see item labeled 304 in figure 3 and lines 41-50 of column 6)

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means for fetching a first and second descriptor address location from shared memory wherein the first descriptor address location is a location of an active descriptor and the second descriptor address location is a location of a reserve descriptor (see figure 5 and lines 14-24 of column 2); and

means for issuing a command to DMA for transfer of the active descriptor (see lines 44-55 of column 1).

Williams fails to teach means for updating the ownership of terminal descriptors by writing an End of Frame (EOF) descriptor to shared memory before writing a Start of Package (SOP) descriptor to shared memory.

Oskouy discloses means for updating the ownership of terminal descriptors by writing an End of Frame (EOF) descriptor to shared memory before writing a Start of Package (SOP) descriptor to shared memory (see lines 15-35 of column 1).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the system of Williams with the system of Oskouy. Oskouy suggests this modification as a means for the software to recognize when the hardware is finished processing the packet and a means for the hardware to recognize when the software is finished processing the packet (see lines 15-31 of column 1 of Oskouy).

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14. Referring to method claim 29, and system claim 36 and 43, Williams teaches holding the active descriptor as a current descriptor within a top cache (see lines 45-53 of column 7).

15. Claims 30,31,33,34,37,38,40,41,44,45, and 47, are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams in view of Oskouy as applied to claims above, and further in view of Lai.

16. Referring to claims method claims 30,31,33, and 34, and system claims 37,38,40,41,44,45, and 47, the combination of Williams and Oskouy teaches the cache comprising the top cache and bottom cache and teaches the processing of descriptors (see Williams, figure 3 and lines 44-55 of column 1 and lines 45-53 of column 7), however, the combination of Williams and Oskouy fails to teach the steps of: copying a reserve descriptor from a bottom cache into the top cache when the current descriptor in the top cache is consumed and the step of fetching the next descriptor in an external ring of descriptors when the reserve descriptor is copied into the top cache; copying the second descriptor address location into the first descriptor address location after the active descriptor is copied to the top cache and fetching a next descriptor address location from the shared

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memory; and placing the next descriptor address location in the second descriptor address location.

Lai teaches a system and method wherein a chained list of descriptors (external ring) is processed Lai teaches that each descriptor in the list (ring) is retrieved, copied, processed, and then released (see Lai, lines 62-67 of column 7 and lines 1-18 of column 8).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the combination of Williams and Oskouy with the above teachings of Lai such that the method includes the steps of: copying a reserve descriptor from a bottom cache into the top cache when the current descriptor in the top cache is consumed and the step of fetching the next descriptor in an external ring of descriptors when the reserve descriptor is copied into the top cache; copying the second descriptor address location into the first descriptor address location after the active descriptor is copied to the top cache fetching a next descriptor address location from the shared memory; and placing the next descriptor address location in the second descriptor address location. One of ordinary skill in the art would have been motivated to make such modification in order to allow for reuse of descriptors

after they have been processed as suggested by Lai (see paragraph bridging columns 8 and 9).

Allowable Subject Matter

17. Claims 27,32,39, and 46 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and a properly filed terminal disclaimer.

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following references are cited to further show the state of the art as it pertains to descriptor management:

U.S. Patent No. 6,363,444 to Platko and U.S. Patent No. 5,781,799 to Leger both teach a host and peripheral transferring data through the use of descriptor rings.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eron J Sorrell whose telephone number is 571 272-4160. The examiner can normally be reached on Monday-Friday 9:00AM - 5:30PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey A Gaffin can be reached on 571 272-4146. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EJS
December 3, 2004



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